

REMARKS

Claims 11, 169-209, 210-219 are pending and currently under examination.

Claim Objections

Claims 185, 193, and 212 are amended to recite dithiothreitol, the standard name for the laboratory reagent abbreviated as DTT.

Rejection under § 112, first paragraph

Claim 209 is rejected for lack of written description. The Examiner states, in part:

The aforementioned claims are directed to encompass all Sir2 core domains from all species, mutated sequences, allelic variants, splice variants, homologs and so forth. None of these "domains meet the written description provision . . .

Claim 209 is amended and now refers to a SIR2 core domain comprising human SIR2 core domain. There is an adequate written description of human SIR2 core domains. Note that the Written Description Guidelines, 66 Fed. Reg. 1099, 1106, states that:

What is conventional or well known to one of ordinary skill in the art need not be disclosed in detailed. If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met.

Human SIR2 proteins were described by Frye, Biochem. Biophys. Res. Commun. 260:273-279 (1999), a reference that is mentioned in the specification at page 39, line 23, and incorporated by reference at page 62, line 24 into the specification of this application. Frye is of record as IDS Item AS2 in the Information Disclosure Statement. The core domain is defined at page 38, line 17 as follows:

The term "core domain"(also referred to herein as "core") refers to the evolutionarily conserved domains of Sir2 or Sir2-like proteins which can be identified, for example, by the comparison of amino acid sequences by, for example, CLUSTAL X, BLAST, PSI-BLAST or FASTA algorithms. The "core domain" is the domain that shows significant identity and/or homology to about 240-270 amino acids of Sir2 or Sir2-like proteins (about 20-50% or higher as

amino acid identity, see Figure 2) and/or possesses the consensus sequence GAG(V/I)S(T/V)S (L/C/A)GIPDFRS (SEQ ID NO:38) and YTQNIID (SEQ ID NO: 28) (Brachmann, et al., Genes & Development 9:2888-2902, (1995)). The "core domain" of Sir2 proteins has NAD-dependent deacetylation and/or mono-ADP-ribosylation activities. Any protein with a "core domain" of a Sir2 protein, a fragment of the core domain, or any functional or structural equivalent which is capable of NAD-dependent deacetylation and/or mono-ADP-ribosylation of nuclear proteins is within the scope of the invention.

The core domain is also described in FIG. 2C. One skilled in the art reading the specification, the above-quoted definition, and the Frye reference would conclude that the Applicants were in possession of the human SIR2 core domain as well as a sufficient number of species of a genus of SIR2 core domains. The Applicants respectfully submit that the written description rejection should be withdrawn in view of the amendment.

Indefiniteness:

The Examiner raised the following rejections:

Claims 11,191 and 209 are rendered vague and indefinite by the use of the phrase "the acetylated amino acid side chain". It is unclear which specific "side chain" Applicant is referring to if the claimed composition contains more than one acetylated amino acid side chains.

The method of claim 11 includes "determining if the acetylated amino acid side chain in the substrate is deacetylated," and thus refers back to the antecedent phrase "an acetylated amino acid side chain." To clarify the issue raised by the Examiner, if the substrate includes more than one acetylated amino acid side chain, because "comprising" language is used, the claimed methods includes embodiments in which at least one of the plural acetylated amino acids are determined to be deacetylated.

Claim 169 is rendered vague and indefinite by the use of the term "the determining". It is unclear whether applicant is referring to determining whether the amino acid side chain in the substrate is deacetylated or some other process. If the former is true, it is suggested that the phrase "wherein step b)comprises.. be used. . ."

Claim 169 has been amended according to the Examiner suggestion.

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Claim 176 is rendered vague and indefinite by the use of the phrase ". . . acetylated at positions corresponding to the lysine amino acid residue is lysine 9 and/or lysine 14 of H3 histone". It is unclear what is meant by said phrase.

Claim 176 has been amended to moot the rejection.

Claim 181 is rendered vague and indefinite by the use of the term "acetylated amino acid side". It is unclear what is meant by said term. Is Applicant referring to the side chain or the amino acid comprising said side chain?

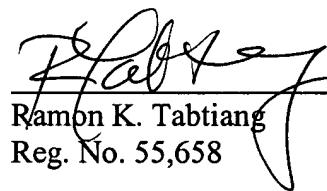
The Applicants have amended claim 181 to clarify that the acetylated amino acid is an acetylated lysine amino acid. Lysine can be acetylated at the epsilon amino group on its side chain.

The Applicants respectfully submit that all claims are in condition for allowance, which action is expeditiously requested. The Applicants do not concede any positions of the Examiner that are not expressly addressed above, nor do the Applicants concede that there are not other good reasons for patentability of the presented claims or other claims. All amendments and cancellations are made without prejudice and disclaimer and may be made for reasons not explicitly stated or for reasons in addition to ones stated.

Enclosed is a \$475 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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